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CENTRAL INTELLIGENCE AGENCY

## INFORMATION REPORT

COUNTRY

USSR - Voronezh

SUBJECT

Synthetic Rubber Plant Kirov St. in Voronezh

PLACE  
ACQUIREDDATE OF  
INFO.

REPORT

CD NO.

25X1

DATE DISTR.

9 May 1955

NO. OF PAGES

10

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(LISTED BELOW)

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SUPPLEMENT TO  
REPORT NO.

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CLASSIFICATION **CONFIDENTIAL**COUNTRY USSR REPORTTOPIC Synthetic Rubber Plant Kirov SK2 in Voronesh

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EVALUATION                      PLACE OBTAINED                      25X1DATE OF CONTENT                      1951 25X1DATE OBTAINED                      DATE PREPARED 1 February 1955REFERENCES                     PAGES 4 ENCLOSURES (NO. & TYPE) 2 - two sketches on ditto, with legendsREMARKS                     

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1. The Kirov SK2 plant had several designations. It was usually called Buna or Synthetic Rubber Plant Kirov or Rubber Factory SK2. The latter designation was inscribed at the entrance to the new area of the plant.                      called it simply "Rubber-Savod Voronesh" (51°38'N/39°12'E).

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The plant is located about 1 km from the Voronesh River, south of the eastern section of the town, some 5-6 km from the town center, and 1-2 km from the southeastern edge of town. A highway runs west of the plant, to the east runs the main railroad line from Voronesh to Kursk (51°42'N/36°12'E), and to Rostov (47°15'N/39°53'E). A small tributary to the Voronesh River flows some 200 to 300 meters to the south. The highway crosses the river on a pontoon bridge at about the height of the plant. A solid bridge some 100 meters to the north was destroyed. About 1 to 2 km further to the north, the highway and the railroad line cross the river on a concrete bridge. An allegedly newly constructed power station is located between the plant and the river. A settlement is situated south of the plant, and at 0.5 to 1 km to the north there is an airfield. The railroad line splits up into the line to Kursk and the one to Rostov. To the northeast of the plant, a side-line branches off to the power station, and three spur tracks lead into the factory area.

2. The plant was said to have been built in the early thirties by German and American firms and engineers and to have been put into operation in 1945/46. During the war, the retreating Soviets blew up most of the buildings themselves and the machinery was dismantled and brought to the Ural Mts. On the Soviet's return, immediately reconstruction of the 80 percent-damaged plant was started. By 1948, reconstruction work was completed on its essential parts. Production was said to have

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been started in early 1948 or in the following months. By 1949, no traces of war damages were visible at the rebuilt installations. While the reconstruction work was still under way, work on the enlargement of the plant was started in 1945/46. The new workshops were designed to accommodate dismantled equipment of the Buna Werke at Schkopau (GDR) to be installed according to plans and photos made during the dismantling. The new plant was scheduled to be completed in 1949 on the day of the October Revolution. It was not before 1951 that production work was observed, however.

3. The factory area including the old and new departments covered some 3 to 4 square km. The reconstructed old portion included the following departments: the butadiene department (conversion of ethyl alcohol), the polymerization department (synthesis department), the production department (tire production), the vulcanization department, and the mechanical workshop (repair and electrical shop). The different workshops were equipped with the following devices: 4 alcohol tanks 20 meters in diameter and 8 meters high, 6 boilers 15 meters in diameter and 15 meters high for the conversion of alcohol, 36 oil-fired contact furnaces, 40-50 vertical boilers and filtering installation in several superimposed rows, 3 very heavy rolling mills manufactured by Krupp-Gruson, 3 kneading machines manufactured by Werner & Pfleiderer, 30-40 stirrers, several rows of chamber furnaces for vulcanization purposes, 10 lathes and numerous other machine tools.

The new portion of the plant included the following departments: the calcium carbide department, the acetylene department, the polymerization department (synthesis), the processing department (kneading, mixing, and rolling department), and the mechanical workshop (blacksmith shop, locksmith shop, repair shop).

The following equipment was observed at the new plant:

10 large calcium carbide furnaces 7 meters in diameter and 10 meters high, 8 acetylene furnaces 7-8 meters in diameter and 25-30 meters high, 4 large and 19 medium vertical furnaces, and 4-6 large contact furnaces, 40 boilers with stirrers, 48 large centrifuges, kneading machines and rubber rolling mills, 25 machine tools.

All production workshops of the old and the new portion of the plant were interconnected by numerous pipelines painted in different colors. Pumping stations, valve control points, filtering devices and high-pressure gauges were also observed.

The following installations were also located within the compound: a laboratory building (laboratory and testing department), an oxygen plant, 2 transformer stations, 1 boiler house with two boilers, a power station with 5 AEG generators (standby capacity for peak requirements), a pumping station for water supply, several administration buildings (main administration, factory kitchen, mess hall), a sawmill and a carpenter's shop, several storage sheds (storage of raw materials, chemicals, rubber, and tires), and open-air dumping areas (especially for coal). 2

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4. Synthetic rubber was allegedly manufactured according to German procedure at the old portion of the factory.

The raw synthetic rubber was similar in appearance to natural rubber (crepe) with a rippled surface and of whitish-yellow to milky grey color. The raw synthetic rubber was shipped in sheets 1x1 to 2x2 meters square and 4-10 cm thick.

The daily output of the new installation rapidly increased from 2 to 5 tons and was scheduled to reach 320 tons.

[REDACTED] 25X1

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5. Power was delivered by the power plant 100 meters west of the factory. This power plant was equipped with 4-6 turbines. The factory-owned generator provided the peak loads required.

Water was supplied by a pumping station from the above mentioned tributary of the Voronezh River.

The alcohol required for synthetic rubber production (96 to 98 percent alcohol content) is delivered by Rumania. An average of 3 to 4 tank cars or 60-80 cubic meters of alcohol arrived at the plant daily.

[REDACTED] 25X1

All coal shipments arrived by rail.

Lime stone required for the production of calcium carbide arrived by truck. [REDACTED]

[REDACTED] 25X1

6. The plant was headed by a civilian manager. [REDACTED] A Soviet engineer was in charge of the reconstruction and enlargement project. [REDACTED] After completion of the construction work, two engineers and 70 specialists from among the German PWs were detained at the compound.

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The work force per shift was estimated to be between 2,000 and 3,000 persons, most of them females. On the average, three 8-hour shifts were worked daily. 4

7. The factory area was surrounded partly by a 2 to 2.5 meter high board fence and partly by a concrete wall topped with barbed wire. Watch towers were located every 50 to 100 meters. They were equipped with flood lights to illuminate the compound at night. The factory had two closely guarded entrances where passes were checked. Armed civilian factory police (mostly females) checked the entrances to the different workshops. Guards with dogs patrolled the compound during the daytime. The fire brigade was, allegedly, a "modest" one. No data concerning active or passive air protection measures were available.

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1. Comment. For location sketch of the plant, see Annex 1
2. Comment. For layout plan of the plant, see Annex 2,
3. Comment. the SK 2 plant

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The plant was built in 1932 and, prior to the war, represented one of the largest synthetic rubber plants in the USSR. The machinery, which had been dismantled and shipped away during the evacuation of the region, was brought back in mid-1948. Reconstruction was completed in 1946/47, production was started in September 1947. The first stage of the enlargement program which started in 1946 and envisaged the installation of dismantled installations from the Schkopau synthetic rubber plant, was finished during the winter 1948/49. By late 1950, construction work at the new portion of the factory was completed and by early 1951 production was started. The old department worked according to Professor Lebedew's divinyl procedure on the basis of ethyl alcohol. The new department used the Buna or Sowpren procedure employing calcium carbide.

The neighboring Voronesh power plant delivered power to the synthetic rubber factory as well as to parts of the town. It will also supply the steam required by the new departments of the plant.

Production figures in previous years were as follows:

by late 1947	7 tons per day
early 1948	9 tons per day
mid-1948	11 tons per day
early 1949	20 tons per day

With the new department in full operation, the production target was 40 tons per day.

The production department of the old plant manufactured tires for trucks and aircraft.

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The oxygen department had an output of 250 - 300 liters of oxygen per hour.

The Rulon plant mentioned is supposed to be the plant in Dzershinsk (56°15'N/43°24'E) which is known to manufacture plexiglass.

4. Comment. Work was done in three shifts per day including Sundays and holidays. Before production work was started, the work force of the new area of the plant was from 2,000 to 2,500, this figure subsequently rose to about 4,000. General manager of the plant was one Matveyev (fnu), technical manager was chief engineer Shenzov (fnu). Two or three German engineers, experts in buna matters, came over from Halle/Saale (M 52/D92) to work at the synthesis department.

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Annex 1

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Location sketch of the Kirov SK 2 Synthetic Rubber Plant

- 1 - Synthetic Rubber Plant Kirov SK 2
- 2 - Highway
- 3 - Pontoon bridge
- 4 - Destroyed bridge
- 5 - Concrete bridge (road and railroad bridge)
- 6 - Double-track railroad line
- 7 - Small stream
- 8 - Power plant
- 9 - Airfield
- 10 - Settlement

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Annex 2

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- 2 -

Layout plant of the Kirov SK 2 Synthetic Rubber Plant

Legend:

- 1 - Four alcohol tanks 20 meters in diameter and 8 meters high.
- 2 - Butadiene department, workshops No 2 and No 3 equipped with six boilers 15 meters in diameter and 15 meters high.
- 3 - Polymerization department, workshops No 5 and No 6, equipped with 36 contact furnaces.
- 4 - Dressing department, workshop No 8, equipped with 40-50 vertical furnaces and 30-40 stirring devices
- 5 - Production department (tire production), workshops No 1 and No 12, equipped with three rolling mills manufactured by Krupp-Gruson, and three kneading mills manufactured by Werner & Pfleiderer.
- 6 - Vulcanization department, workshop No 4, equipped with several chamber furnaces
- 7 - Mechanical workshop, No 17, equipped with 10 lathes
- 8 - Calcium carbide department, workshop No 15, equipped with 10 furnaces, 7 meters in diameter and 10 meters high
- 9 - Acetylene department, workshops No 16, 22a and 22b, equipped with 8 boilers, 7-8 meters in diameter and 25-30 meters in diameter
- 10 - Polymerization department, workshop No 25, equipped with four large and 19 medium vertical boilers and 4-6 contact furnaces
- 11 - Dressing department, workshops No 26 and No 28, equipped with 40 boilers with stirrers, and 48 centrifuges, kneading mills and raw rubber rolling mills.
- 12 - Mechanical department, workshop No 19, equipped with 25 machine tools
- 13 - Laboratory and testing department, workshop No 10
- 14 - Oxygen department
- 15 - Two transformer stations
- 16 - Power plant equipped with 5 AEG generators
- 17 - Boiler house equipped with 2 boilers
- 18 - Pumping station
- 19 - Administration building
- 20 - Mess hall and kitchen

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Annex 2

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- 21 - Sawmill
- 22 - Carpenter's shop
- 23 - Guard
- 24 - Storage sheds for raw materials, chemicals, rubber and tires
- 25 - Coal and limestone dump
- 26 - Railroad branch lines
- 27 - Highway
- 28 - Small stream
- 29 - Power station equipped with 4-6 turbines

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~~ANNEX~~ 1

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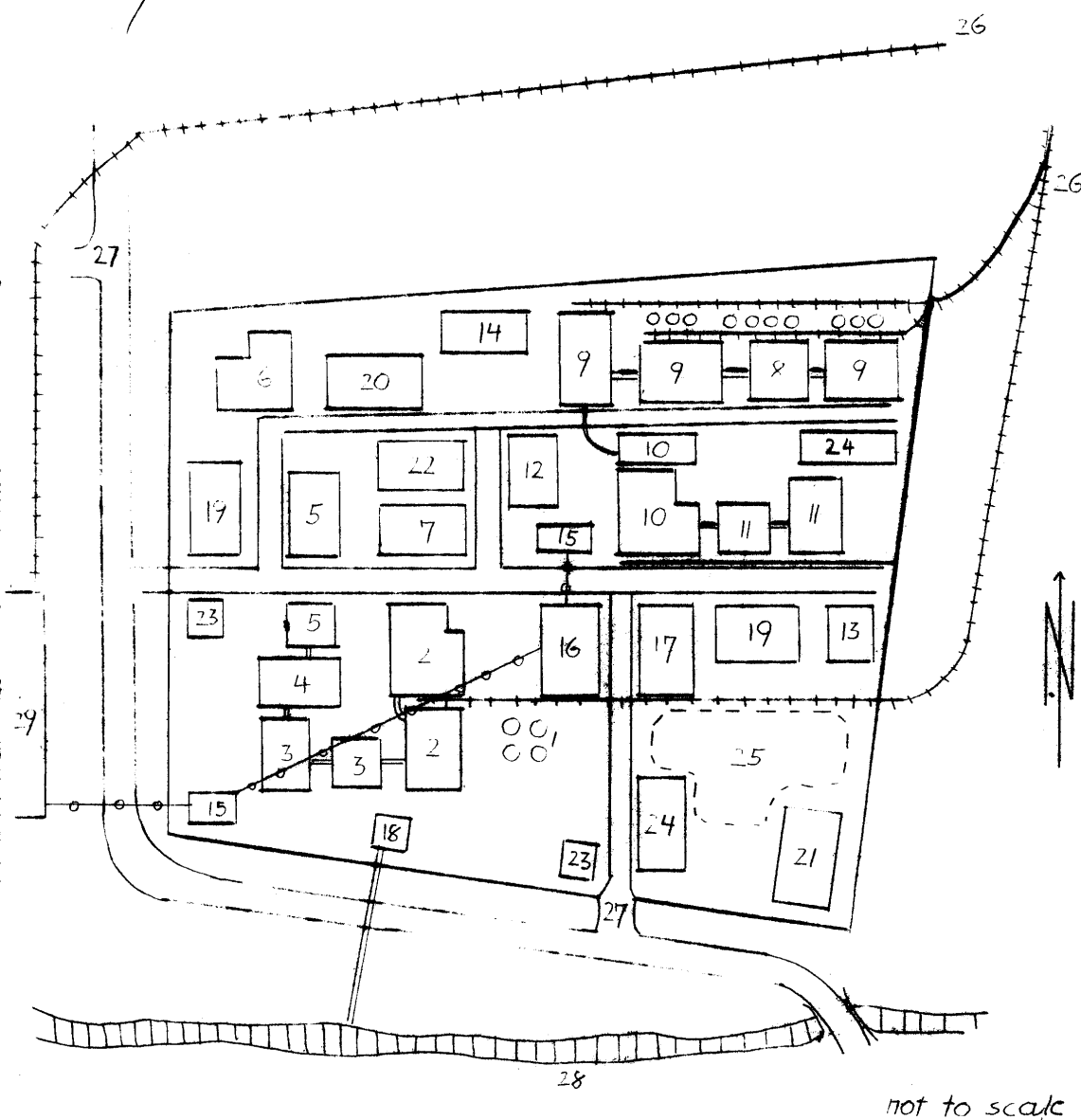
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Annex 2

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For legend, see next page

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## INFORMATION REPORT

REPORT

CD NO.

COUNTRY USSR (Voronezh Oblast)

DATE DISTR. 9 May 1955

SUBJECT Synthetic Rubber Plant Kirev SK2 in Voronezh

NO. OF PAGES 10

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The following equipment was observed at the new plant:

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2. Comment. For layout plan of the plant, see Annex 2.

3. Comment. the SK 2 plant

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4. Comment.

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Annex 1  
2 25X1

Location sketch of the Kirov SK 2 Synthetic Rubber Plant

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Layout plan of the Kirov SK 2 Synthetic Rubber Plant

Legend:

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- 8 - Calcium carbide department, workshop No 15, equipped with 10 furnaces, 7 meters in diameter and 10 meters high
- 9 - Acetylene department, workshops No 16, 22a and 22b, equipped with 3 boilers, 7-8 meters in diameter and 25-30 meters in diameter
- 10 - Polymerization department, workshop No 25, equipped with four large and 19 medium vertical boilers and 4-6 contact furnaces
- 11 - Dressing department, workshops No 26 and No 28, equipped with 40 boilers with stirrers, and 48 centrifuges, kneading mills and raw rubber rolling mills.
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- 18 - Pumping station
- 19 - Administration building
- 20 - Mess hall and kitchen

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Annex 2

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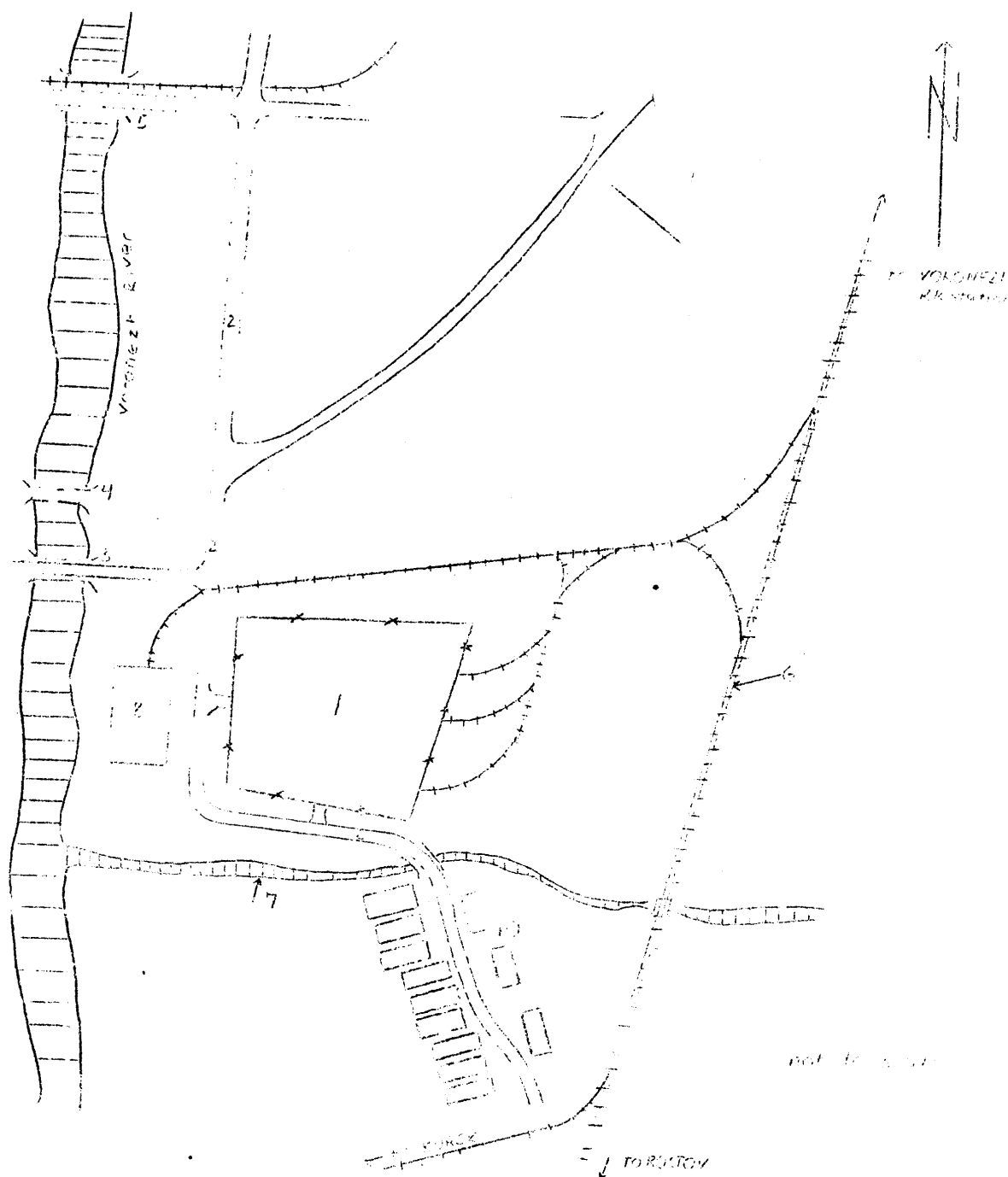
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- 25 - Coal and limestone dump
- 26 - Railroad branch lines
- 27 - Highway
- 28 - Small stream
- 29 - Power station equipped with 4-6 turbines

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Annex 1

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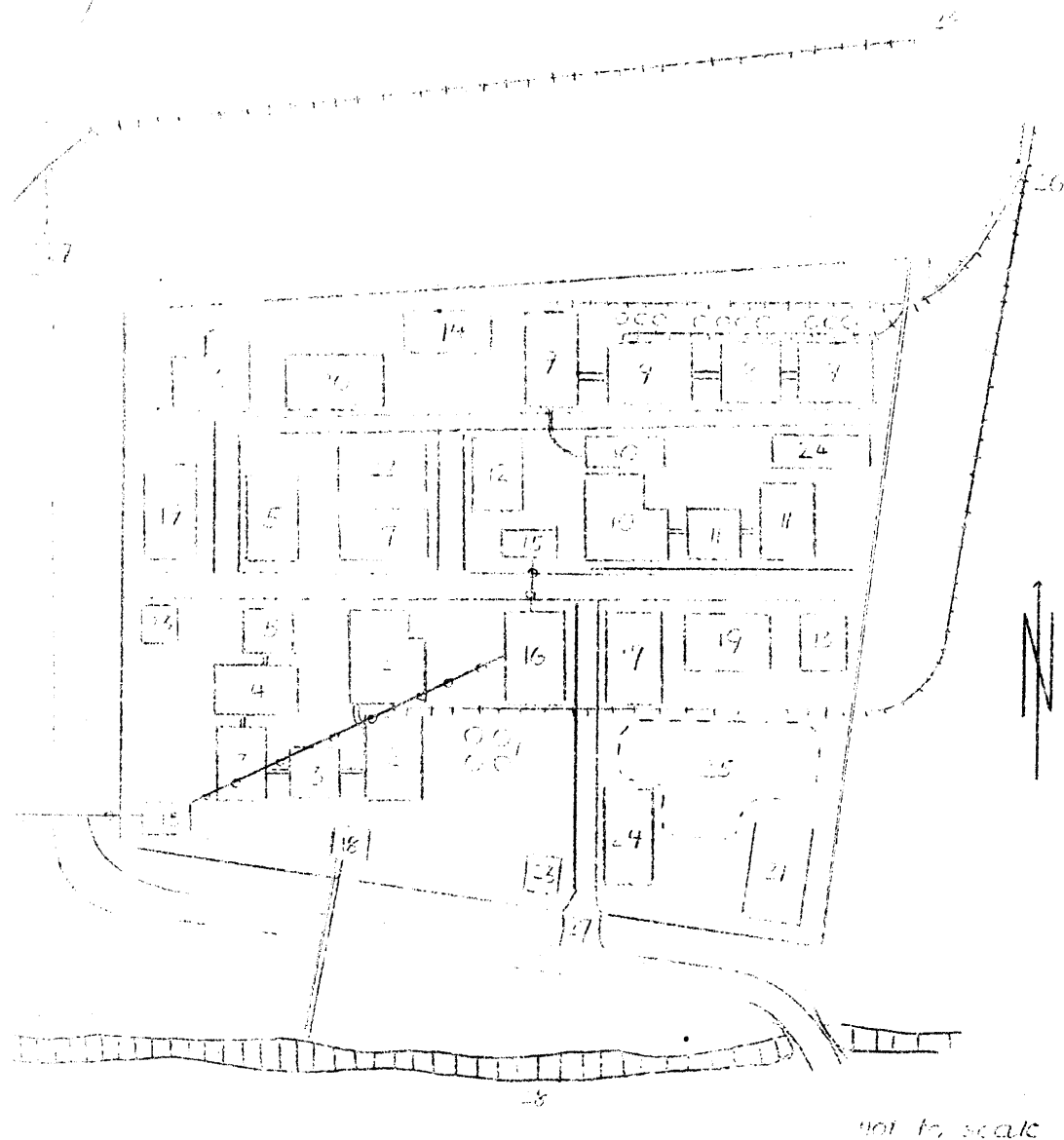
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Annex 2

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